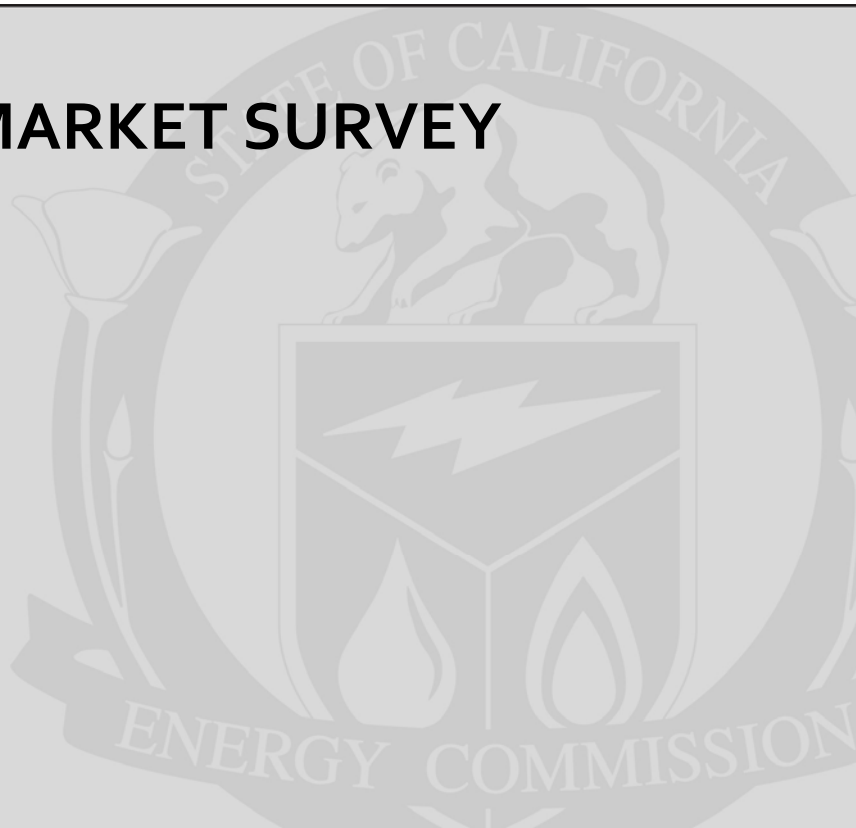


# CONSULTANT REPORT

## APPLIANCE MARKET SURVEY



Prepared for: California Energy Commission

Prepared by: Benningfield Group, Inc.

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## **ABSTRACT**

This is a report of the findings of work done under the Contract Agreement No. 400-09-004 between the California Energy Commission and Benningfield Group, Inc. It summarizes the results of the surveys that assess the extent of compliance with the Appliance Efficiency Regulations. The information for this report was collected for two priority lists, one for appliances that have not yet been surveyed and another for appliances that were surveyed in previous contracts. The appliances surveyed were found at retail/wholesale stores, Internet sites, and in catalogs. This report delineates the degree to which products were or were not in compliance with the regulations.

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## EXECUTIVE SUMMARY

The report summarizes work that was completed on the Contract Agreement No. 400-09-004 between the California Energy Commission and Benningfield Group, Inc. The work was completed in the following five tasks:

- Task 1: Kick-off Meeting
- Task 2: Progress Reports
- Task 3: Retail/Wholesale Store Surveys
- Task 4: Catalog and Internet Surveys
- Task 5: Final Summary Report of All Surveys

The survey team performed catalog, field, and Internet surveys to obtain data on the frequency of compliance with certifying products and also the frequency of compliance with applicable requirements. Surveyors collected data to determine whether a particular model met California regulations and whether that model was listed in the California Energy Commission Appliance Database. Data for each appliance category, model and information source (catalog, Internet, or store) was documented in a Web-based database created for this project.

In the past, California Energy Commission staff waited until the surveys were complete before taking any action on the findings. For this project, the California Energy Commission staff was able to access the database during the project and created several letters to manufacturers, which helped to improve compliance.

Findings show that while many products are in compliance, there are others with a high degree of noncompliance. Appliances ranged from 100 percent noncompliant to 100 percent compliant. The most compliant appliances were the computer room glycol cooled air conditions, and heat pump pool heaters. On the other end of the spectrum, the least compliant appliances are under-cabinet luminaires and infrared heaters (patio heaters and non-patio heaters).

The surveyors visited 21 stores, conducted 104 catalog and Internet surveys, and collected data on 2,240 models total.

Overall, the team surveyed 2,240 models and found 1,150 of them to be noncompliant, yielding an overall result of 51.34 percent noncompliant.



**Figure 1: Best to Worst Appliance Compliance Table**

<b>Appliance Categories</b>	<b>% Noncompliant</b>
Computer Room Glycol-Cooled Air Conditioners	0.00%
Heat Pump Pool Heaters	0.00%
Portable Electric Spas	11.93%
Showerheads	16.33%
Residential Exhaust Fans	20.41%
Water Dispensers	21.21%
Computer Room Air-Cooled Air Conditioners	26.32%
Computer Room Water-Cooled Air Conditioners	27.45%
Ice Makers	31.43%
DVD Player & DVD Recorders	35.00%
Whole House Fans	36.17%
Commercial Convection Ovens	37.10%
Televisions	38.19%
Commercial Refrigerators/Freezers/Refrigerator-Freezers	41.57%
Combination Space/Water Heating Appliances	41.67%
Commercial Hot Food Holding Cabinets	51.09%
Torchieres	51.58%
Commercial Range Tops	55.62%
Portable (Spot) Air Conditioners	60.29%
Compact Audio Products	68.00%
Tub Spout Diverters	75.00%
Evaporative Coolers	76.92%
Ceiling Fans (excluding low-profile ceiling fans)	80.30%
Refrigerators w/o Doors (for Beverages)	82.35%
Refrigerated Canned/Bottled Beverage Vending Machines	85.00%
Residential Wine Chillers	86.49%
Infrared Heaters (Patio Heaters & non-Patio Heaters)	89.66%
Under-Cabinet Luminaires	100.00%
Appliance Categories in which models were not found	
There were no evaporatively cooled computer room air conditioners found	

**Source:** BenningfieldGroup, Inc., survey data

# Procedures/Scope of Work Overview

## Scope of Work

Benningfield Group, Inc., was given two priority lists of appliances on which to conduct surveys, both created by the California Energy Commission. The first list was made up of appliances that had not been previously surveyed, and the second list contained appliances that had been covered in previous surveys. The survey portion of the project was executed by:

- Performing online and catalog surveys of the listed appliances on:
  - Manufacturer websites
  - Distributor websites
  - Retail websites
  - Auction websites
  - Catalogs
- Performing retail/wholesale surveys

The purpose of these surveys was to assess the extent of compliance with the Energy Commission's Appliance Efficiency Regulations. For an appliance to be considered compliant, it must meet two criteria:

- It must meet design or efficiency standards (if applicable) as stated in the regulations for that particular appliance.
- It must be listed in the Energy Commission's Appliance Database ([www.appliances.energy.ca.gov](http://www.appliances.energy.ca.gov))

Appliances that are shown to be noncompliant by these criteria may actually meet Title 20 standards. However, they are not fully compliant until they are listed in the Energy Commission's database. The data from this survey project is being used to encourage manufacturers to list their compliant products and to encourage manufacturers to comply with Title 20 requirements, if they fall short. In some cases, it could not be determined whether an appliance met applicable standards because the key data was not documented in the manufacturer's literature for the model surveyed.

The results of the surveys will provide the Energy Commission with both:

- The regulated appliance where the most noncompliance occurs.
- The market participants who are most noncompliant.

Appliance Categories Priority List #1 included:

- Combination Space/Water Heating Appliances
- Commercial Refrigerators/Freezers/Refrigerator-Freezers
- Compact Audio Products
- Computer Room Air-Cooled Air Conditioners
- Computer Room Evaporatively Cooled Air Conditioners
- Computer Room Glycol Cooled Air Conditioners
- Computer Room Water Cooled Air Conditioners
- DVD Players and DVD Recorders
- Evaporative Coolers
- Heat Pump Pool Heaters
- Ice Makers
- Infrared Heaters (Patio Heaters and non Patio Heaters)
- Portable (Spot) Air Conditioners
- Residential Wine Chillers
- Showerheads
- Televisions
- Tub Spout Diverters
- Water Dispensers
- Whole House Fans

Appliance Categories Priority Lists #2 included:

- Ceiling Fans (excluding low-profile ceiling fans)
- Commercial Convection Ovens
- Commercial Hot Food Holding Cabinets
- Commercial Range Tops
- Portable Electric Spas
- Refrigerated Canned/Bottled Beverage Vending Machines
- Refrigerators w/o Doors (for beverages)
- Residential Exhaust Fans
- Torchieres
- Under-Cabinet Luminaires

## **Methodology and Findings**

### **Retail/Wholesale Store Surveys**

#### **Retail/Wholesale Store Site Selection**

When selecting the retail/wholesale store survey sites, the survey team conducted an Internet search to see which sites in different areas would offer the best coverage for the appliances to be surveyed. Some appliance specialty sites were also selected using the Internet to collect data on the appliances that may have not been covered with the first round of site selections. The sites were spread through Northern, Central, and Southern California for appliance sampling variety.

#### **Retail/Wholesale Store Problems**

One problem that came up when conducting the store surveys was the unwillingness of some managers and companies to allow the survey because of fear that something would be found that would result in official penalties. In these cases, replacement stores were identified and surveyed. In other cases, attempts were made to increase the comfort level of the store managers. (See recommendations section.)

#### **Retail/Wholesale Store Successes**

Even though a few stores were unwilling to cooperate, most retail and wholesale stores were cooperative, and surveyors were able to obtain the data needed. The authors were often able to reference the database directly on site via the Internet, which improved the effectiveness of the site surveys. Some sites also yielded data for multiple appliance categories.

## Priority List #1

### *Combination Space/Water Heating Appliances*

The surveying party was not able to find combination space/water heating appliances at any of the sites that were visited. This may be due to the high level of knowledge needed to install this appliance, essentially rendering the items cost-ineffective to stock at a retail/wholesale store.

### *Commercial Refrigerators/Freezers/Refrigerator-Freezers*

This appliance was more readily available than other surveyed appliances when conducting retail/wholesale store surveys. With the surveying of three sites, data was collected for 63 appliances.

**Figure 2: Commercial Refrigerators/Freezers/Refrigerator-Freezers Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	63	37	58.73%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Compact Audio Products*

With the four retail/wholesale store surveys that were conducted, data was collected for a sampling of 27 models.

**Figure 3: Compact Audio Products Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	27	16	59.26%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Computer Room Air-Cooled Air Conditioners*

For this appliance, data was gathered for 14 models from one retail/wholesale store survey.

**Figure 4: Computer Room Air-Cooled Air Conditioners Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	14	14	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Computer Room Evaporatively Cooled Air Conditioners*

This appliance was not found. Of all the retail/wholesale store surveys that were conducted, none had computer room evaporatively cooled air conditioners. This is an obsolete category. Technology has advanced past this type of system, and they are no longer commercially available for sale.

### *Computer Room Glycol-Cooled Air Conditioners*

This appliance was also not available when conducting the retail/wholesale store surveys. This product is still available but only through Internet sites.

### *Computer Room Water-Cooled Air Conditioners*

This appliance was commonly found when conducting the retail/wholesale store surveys. Surveying one site yielded 14 models for data collection. None of the appliances surveyed were in compliance with the regulations.

**Figure 5: Computer Room Water-Cooled Air Conditioners Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	14	14	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *DVD Player and DVD Recorders*

For this appliance, 20 models were surveyed from five different retail/wholesale stores.

**Figure 6: DVD Player & DVD Recorders Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	20	10	50%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Evaporative Coolers*

When conducting the store surveys, this product was found at five of the sites. From those sites, survey data for 33 models was collected. None of the appliances were in compliance with the Regulations.

**Figure 7: Evaporative Coolers Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	33	33	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Heat Pump Pool Heaters*

For this appliance, the surveyor found four models at one survey site, and the product showed a high level of compliance with the regulations. Due to its special purpose it was not as commonly found as most of the other appliances being surveyed.

**Figure 8: Heat Pump Pool Heaters Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	4	0	0%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Ice Makers*

For this appliance, surveyors surveyed 16 models from three different retail/wholesale stores.

**Figure 9: Ice Makers Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	16	1	6.25%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Infrared Heaters (Patio Heaters and Non-Patio Heaters)*

The surveyor was able to collect data for multiple models of this appliance from a small number of sites. There were 163 models surveyed from two retail/wholesale stores. With this large number of models, surveyors also noticed that there was a high degree of noncompliance.

**Figure 10: Infrared Heaters (Patio Heaters & Non-Patio Heaters) Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	163	160	98.16%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Portable (Spot) Air Conditioners*

Out of three sites that were surveyed for this appliance, the surveyor was able to collect data for 35 models.

**Figure 11: Portable (Spot) Air Conditioners Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	35	22	62.86%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Residential Wine Chillers*

In three surveyed sites, the surveyor was able to collect data for nine models. Results indicated a high noncompliant percentage.

**Figure 12: Residential Wine Chillers Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	9	8	88.89%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Showerheads*

This appliance was widely available at sites due to the fact that it is a common appliance, easy to use, and easy to install. It was found at six of the sites that were surveyed, and of those sites 98 models were found.

**Figure 13: Showerheads Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	98	13	13.27%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Televisions*

Three sites and 85 models were surveyed for this appliance.

**Figure 14: Televisions Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	85	49	57.65%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Tub Spout Diverters*

This appliance was found at four sites, and 41 models were surveyed.

**Figure 15: Tub Spout Diverters Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	41	22	53.66%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Water Dispensers*

This item was difficult to locate, with four models found in two surveyed sites. The surveyor did find a high level of compliance, however.



**Figure 16: Water Dispensers Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	4	0	0%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Whole House Fans*

Out of three sites, 17 models were surveyed.

**Figure 17: Whole House Fans Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	17	13	76.47%

Source: BenningfieldGroup, Inc. appliance market survey data

### **Priority List #2**

#### *Ceiling Fans (excluding low-profile ceiling fans)*

There were 36 models surveyed from six sites for this appliance. This appliance presented a high noncompliant percentage.

**Figure 18: Ceiling Fans (excluding low-profile ceiling fans) Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	36	35	97.22%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Commercial Convection Ovens*

From one site, six models were surveyed.

**Figure 19: Commercial Convection Ovens Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	6	4	66.67%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Commercial Hot Food Holding Cabinets*

The three models that were surveyed all came from one selected site, and the compliance level was poor.

**Figure 20: Commercial Hot Food Holding Cabinets Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	3	3	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Commercial Range Tops*

The 13 models that were surveyed were found at two sites. This item was highly noncompliant. Below is a table showing the survey efforts and compliance findings.

**Figure 21: Commercial Range Tops Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	13	13	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Portable Electric Spas*

From two sites, 19 models were surveyed, and all were in compliance.

**Figure 22: Portable Electric Spas Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	19	0	0%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Refrigerated Canned/Bottled Beverage Vending Machines*

This appliance was difficult to find in stores. Due to the limited demand and high cost of the appliance, it was not available on the retail/wholesale store showrooms. Only one was found at one survey site.

**Figure 23: Refrigerated Canned/Bottled Beverage Vending Machines Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	1	0	0%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Refrigerators w/o Doors (for beverages)*

This item was similar to the vending machines in that it was not widely available, due to low demand and a high price tag.

**Figure 24: Refrigerators w/o Doors (for beverages) Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	1	1	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Residential Exhaust Fans*

From two sites, 17 models were surveyed.

**Figure 25: Residential Exhaust Fans Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	17	4	23.53%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Torchieres*

This item was found at multiple sites, which allowed a larger sample of the product to be surveyed than most other appliances that were surveyed in the study. There were 53 models surveyed from five stores.

**Figure 26: Torchieres Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	53	20	37.74%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Under-Cabinet Luminaires*

Although this category exists in the Energy Commission's Appliance Efficiency Database, no models are currently listed there. The surveyor was able to survey 52 models at five sites, providing an excellent sampling of what is available on the market.

**Figure 27: Under-Cabinet Luminaires Retail/Wholesale Store Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Store	52	52	100%

Source: BenningfieldGroup, Inc. appliance market survey data

## Catalog and Internet Surveys

### Catalog and Internet Selection

Two distinct methods were used when selecting the websites for the surveys:

- Web searches were used to locate the appliances on manufacturer, distributor, retailer, and auction websites.
- The Energy Commission's Appliance Efficiency Database was used to select manufacturer websites that included the appliances to be surveyed.

### Catalog and Internet Problems

Some challenges did surface during the work on the website and catalog surveys. The surveys show that because of the increase of Web sales and marketing sites, more and more customers, as well as retailers, are using the Web for sourcing products. This can be seen when looking at the tables of the survey findings. Companies are opting to use a Web-based catalog as opposed to a printed version, due to the printing costs and ecological considerations.

One issue that arose with the website surveys was that it took a substantially longer time to review the online catalogs and websites than to tally information from a printed catalog form or from a store visit. Frequently the surveyor would have to search through an entire website to retrieve the required product information. Specifications for appliances were difficult to find, and, in some cases, were not even available for the consumer. Most websites were also not very forthcoming with information indicating whether a certain appliance was meant for sale in California.

One other anomaly that was found when working on the Internet surveys was the redundancy of data found on distributor and retail websites. Resources could be better used in future appliance market surveys by combining these two categories. Both distributor and retail are outlets that ultimately provide the consumer with the product, so surveying both of these parts of the supply chain results in capturing identical data. Another justification for combining the two categories is that distributors do not always maintain a public Internet presence and have been difficult to find online.

The surveyors also encountered some problems when visiting auction sites. One of the problems was not being able to find all the required data to check the compliance for each appliance found on the site. The amount of information that is listed for each appliance is decided by the sellers and frequently did not contain data needed to verify that a model met the regulations. Appliances that may not be eligible to be sold in California may be offered for sale through auction sites. This may provide the opportunity for a California resident to buy a product that is not compliant with the regulations or listed in the database.

## Catalog and Internet Successes

For the surveyor to overcome the challenge of not being able to find specific websites to survey, different approaches had to be taken. This was especially the case with distributor sites because they don't have a large Web presence and so cannot be found via traditional search engines. To increase the number of distributor and manufacturer sites surveyed, the survey team located and visited industry-sponsored formal and informal message boards. The entries on the boards in many cases named key distributors who could then be surveyed.

### Priority List #1

#### *Combination Space/Water Heating Appliances*

The 12 websites surveyed included three manufacturer sites.

**Figure 28: Combination Space/Water Heating Appliances Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	12	5	41.67%
Distributor Internet	0	0	
Retail Internet	0	0	
Auction Internet	0	0	
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

#### *Commercial Refrigerators/Freezers/Refrigerator-Freezers*

Websites surveyed included three manufacturer sites, two distributor sites, two retail websites, one auction website, and one catalog. The total number of models surveyed was 103.

**Figure 29: Commercial Refrigerators/Freezers/Refrigerator-Freezers Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	12	6	50%
Distributor Internet	35	10	28.57%
Retail Internet	24	7	29.17%
Auction Internet	4	2	50%
Catalog	28	7	25%

Source: BenningfieldGroup, Inc. appliance market survey data

#### *Compact Audio Products*

Websites surveyed included three manufacturer sites, two distributor sites, two distributor sites, two retail sites, and one auction website. The total number of models surveyed was 48.

**Figure 30: Compact Audio Products Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	31	18	58.06%
Distributor Internet	8	8	100%
Retail Internet	5	5	100%
Auction Internet	4	4	100%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

#### *Computer Room Air-Cooled Air Conditioners*

Websites surveyed included four manufacturer sites and three distributor sites. The total number of models surveyed was 43.

**Figure 31: Computer Room Air-Cooled Air Conditioners Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	21	1	4.76%
Distributor Internet	22	0	0%
Retail Internet	0	0	
Auction Internet	0	0	
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

#### *Computer Room Evaporatively-Cooled Air Conditioners*

This appliance was not found from any online resources. This is an obsolete category because the technology has advanced past this type of system and they are no longer commercially available for sale.

#### *Computer Room Glycol-Cooled Air Conditioners*

Websites surveyed included two manufacturer sites, two distributor sites, and one retail Internet site. The total number of models surveyed was 17.

**Figure 32: Computer Room Glycol-Cooled Air Conditioners Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	7	0	0%
Distributor Internet	7	0	0%
Retail Internet	3	0	0%
Auction Internet	0	0	
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Computer Room Water-Cooled Air Conditioners*

Websites surveyed included three manufacturer sites, three distributor sites, and one retail site. The total number of models surveyed was 37.

**Figure 33: Computer Room Water-Cooled Air Conditioners Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	17	0	0%
Distributor Internet	17	0	0%
Retail Internet	3	0	0%
Auction Internet	0	0	
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *DVD Players and DVD Recorders*

Websites surveyed included three manufacturer sites, two distributor sites, two retail sites, and two auction sites. The total number of models surveyed was 40.

**Figure 34: DVD Player & DVD Recorders Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	19	4	21.05%
Distributor Internet	6	0	0%
Retail Internet	5	2	40%
Auction Internet	10	5	50%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Evaporative Coolers*

Websites surveyed included three manufacturer sites, two retail sites, one auction site, and one catalog. The total number of models surveyed was 32.

**Figure 35: Evaporative Coolers Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	9	3	33.33%
Distributor Internet	0	0	
Retail Internet	10	5	50%
Auction Internet	4	2	50%
Catalog	9	7	77.78%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Heat Pump Pool Heaters*

Websites surveyed included four manufacturer sites, two retail sites, and one auction site. The total number of models surveyed was 41.

**Figure 36: Heat Pump Pool Heaters Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	17	0	0%
Distributor Internet	0	0	
Retail Internet	15	0	0%
Auction Internet	9	0	0%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Ice Makers*

Websites surveyed included three manufacturer sites, three retail sites, one auction site, and two catalogs. The total number of models surveyed was 54.

**Figure 37: Ice Makers Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	18	4	22.22%
Distributor Internet	0	0	
Retail Internet	8	8	100%
Auction Internet	8	4	50%
Catalog	20	5	25%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Infrared Heaters (Patio Heaters and Non-Patio Heaters)*

Websites surveyed included three manufacturer sites, three retail sites, and one auction site. The total number of models surveyed was 40.

**Figure 38: Infrared Heaters (Patio Heaters and Non-Patio Heaters) Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	22	4	18.18%
Distributor Internet	0	0	
Retail Internet	8	8	100%
Auction Internet	10	10	100%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data



### *Portable (Spot) Air Conditioners*

Websites surveyed included three manufacturer sites, one retail site, and one auction site. The total number of models surveyed was 33.

**Figure 39: Portable (Spot) Air Conditioners Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	20	10	50%
Distributor Internet	0	0	
Retail Internet	6	6	100%
Auction Internet	7	3	42.86%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Residential Wine Chillers*

Websites surveyed included three manufacturer sites, four retail sites, and one auction site. The total number of models surveyed was 65.

**Figure 40: Residential Wine Chillers Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	21	14	66.67%
Distributor Internet	0	0	
Retail Internet	23	21	91.30%
Auction Internet	21	21	100%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Showerheads*

Websites surveyed included three manufacturer sites, four retail Internet sites, and one auction site. The total number of models surveyed was 49.

**Figure 41: Showerheads Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	19	0	0%
Distributor Internet	0	0	
Retail Internet	23	11	47.83%
Auction Internet	7	0	0%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Televisions*

Websites surveyed included three manufacturer sites, two distributor sites, two retail sites, and two auction sites. The total number of models surveyed was 59.

**Figure 42: Televisions Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	27	0	0%
Distributor Internet	6	0	0%
Retail Internet	11	3	27.27%
Auction Internet	15	3	20%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Tub Spout Diverters*

Websites surveyed included three manufacturer sites, four retail sites, and one auction site. The total number of models surveyed was 59.

**Figure 43: Tub Spout Diverters Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	23	21	91.30%
Distributor Internet	0	0	
Retail Internet	23	20	86.96%
Auction Internet	13	12	92.31%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Water Dispensers*

Websites surveyed included one manufacturer site, four retail sites, and one auction site. The total number of models surveyed was 29.

**Figure 44: Water Dispensers Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	5	3	60%
Distributor Internet	0	0	
Retail Internet	13	4	30.77%
Auction Internet	11	0	0%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Whole House Fans*

Websites surveyed included three manufacturer sites, three retail sites, and one auction site. The total number of models surveyed was 30.

**Figure 45: Whole House Fans Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	16	2	12.50%
Distributor Internet	0	0	
Retail Internet	9	2	22.22%
Auction Internet	5	0	0%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### **Priority List #2**

#### *Ceiling Fans (excluding low-profile ceiling fans)*

Websites surveyed included three retail sites and one auction site. The total number of models surveyed was 30.

**Figure 46: Ceiling Fans (excluding low-profile ceiling fans) Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	0	0	
Distributor Internet	0	0	
Retail Internet	11	7	63.64%
Auction Internet	19	11	57.89%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Commercial Convection Ovens*

Websites surveyed included three manufacturer sites, two distributor sites, two retail Internet sites, one auction site, and two catalogs. The total number of models surveyed was 56.

**Figure 47: Commercial Convection Ovens Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	16	8	50%
Distributor Internet	7	0	0%
Retail Internet	16	0	0%
Auction Internet	1	1	100%
Catalog	16	10	62.50%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Commercial Range Tops*

Websites surveyed included four manufacturer sites, three distributor sites, two retail sites, one auction site, and two catalogs. The total number of models surveyed was 156.

**Figure 48: Commercial Range Tops Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	76	41	53.95%
Distributor Internet	40	20	50%
Retail Internet	20	0	0%
Auction Internet	6	6	100%
Catalog	14	14	100%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Portable Electric Spas*

Websites surveyed included three manufacturer sites, one distributor site, two retail sites, and three catalogs. The total number of models surveyed was 90.

**Figure 49: Portable Electric Spas Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	22	7	31.82%
Distributor Internet	6	6	100%
Retail Internet	14	0	0%
Auction Internet	21	0	0%
Catalog	27	0	0%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Refrigerated Canned/Bottled Beverage Vending Machines*

Websites surveyed included three manufacturer sites, two distributor sites, two retail sites, and one auction site. The total number of models surveyed was 39.

**Figure 50: Refrigerated Canned/Bottled Beverage Vending Machines Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	14	12	85.71%
Distributor Internet	15	13	86.67%
Retail Internet	6	6	100%
Auction Internet	4	3	75%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Refrigerators w/o Doors (for beverages)*

Websites surveyed included four manufacturer sites, one distributor site, two retail sites, one auction site, and two catalogs. The total number of models surveyed was 50.

**Figure 51: Refrigerators w/o Doors (for beverages) Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	19	16	84.21%
Distributor Internet	4	4	100%
Retail Internet	14	10	71.43%
Auction Internet	7	6	85.71%
Catalog	6	5	83.33%

Source: BenningfieldGroup, Inc. appliance market survey data

### *Residential Exhaust Fans*

Websites surveyed included three retail sites and one auction site. The total number of models surveyed was 32.

**Figure 52: Residential Exhaust Fans Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	0	0	
Distributor Internet	0	0	
Retail Internet	13	3	23.08%
Auction Internet	19	3	15.79%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Torchieres*

Websites surveyed included three retail sites and one auction site. The total number of models surveyed was 42.

**Figure 53: Torchieres Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	0	0	
Distributor Internet	0	0	
Retail Internet	15	4	26.67%
Auction Internet	27	25	92.59%
Catalog	0	0	

Source: BenningfieldGroup, Inc. appliance market survey data

### *Under-Cabinet Luminaires*

Websites surveyed included two retail sites and one auction site. The total number of models surveyed was 20.

**Figure 54: Under-Cabinet Luminaires Internet and Catalog Findings**

Survey Type	Total Items	Noncompliant	% Noncompliant
Manufacturer Internet	0	0	
Distributor Internet	0	0	
Retail Internet	7	7	100%
Auction Internet	13	13	100%
Catalog	0	0	

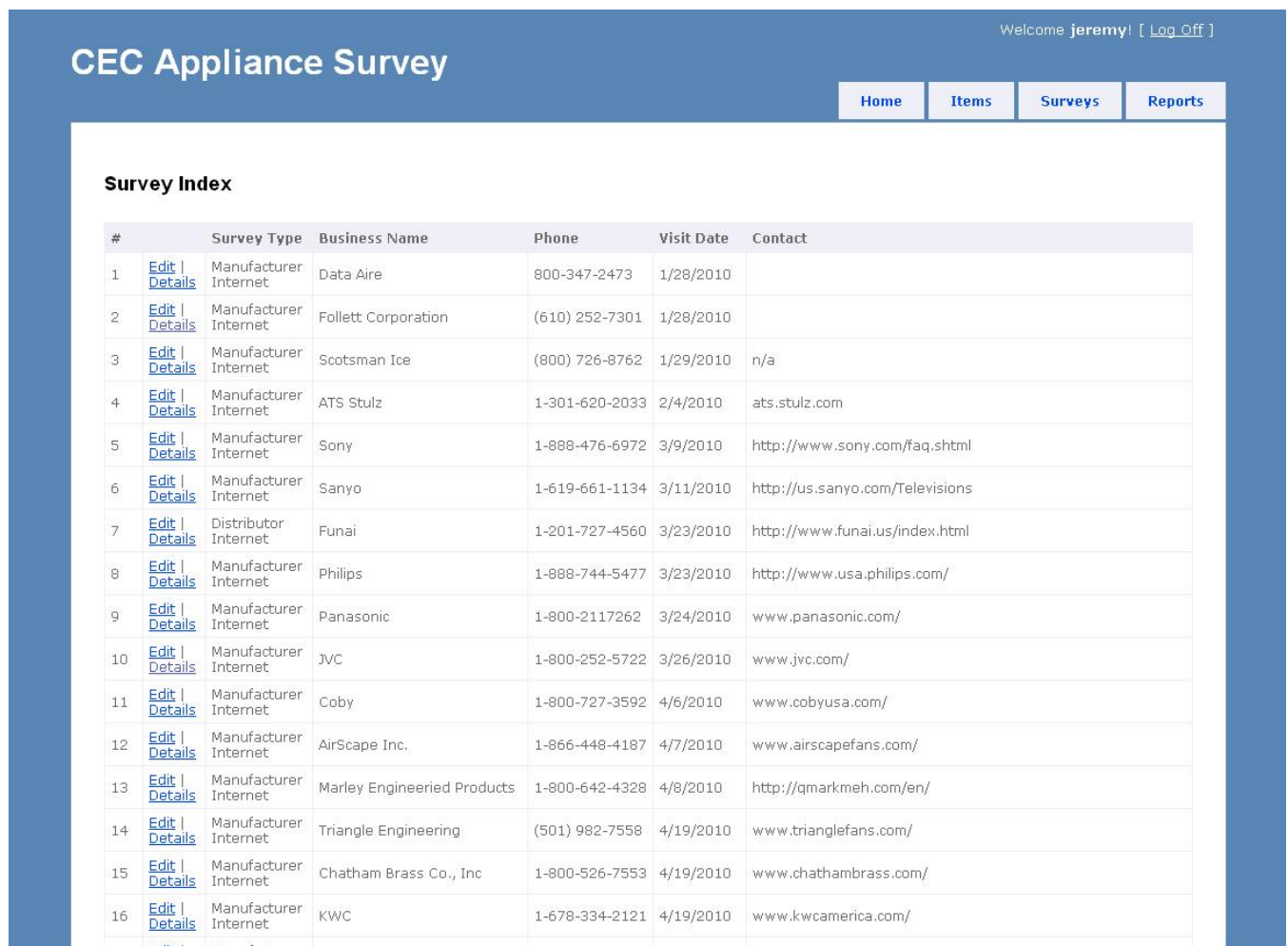
Source: BenningfieldGroup, Inc. appliance market survey data

# Project Evaluation

## Appliance Tracking

A specialized tracking system was created to store and work with the large amount of information that was collected from the surveys for this project. The system allows the user to create a survey database with information from the source sites and then attach models found in the retail/wholesale store, Internet site, or catalog. The figure shows the tracking system with some of the surveys that were created.

Figure 55: Tracking System's Survey List Page



#		Survey Type	Business Name	Phone	Visit Date	Contact
1	<a href="#">Edit   Details</a>	Manufacturer Internet	Data Aire	800-347-2473	1/28/2010	
2	<a href="#">Edit   Details</a>	Manufacturer Internet	Follett Corporation	(610) 252-7301	1/28/2010	
3	<a href="#">Edit   Details</a>	Manufacturer Internet	Scotsman Ice	(800) 726-8762	1/29/2010	n/a
4	<a href="#">Edit   Details</a>	Manufacturer Internet	ATS Stulz	1-301-620-2033	2/4/2010	ats.stulz.com
5	<a href="#">Edit   Details</a>	Manufacturer Internet	Sony	1-888-476-6972	3/9/2010	http://www.sony.com/faq.shtml
6	<a href="#">Edit   Details</a>	Manufacturer Internet	Sanyo	1-619-661-1134	3/11/2010	http://us.sanyo.com/Televisions
7	<a href="#">Edit   Details</a>	Distributor Internet	Funai	1-201-727-4560	3/23/2010	http://www.funai.us/index.html
8	<a href="#">Edit   Details</a>	Manufacturer Internet	Philips	1-888-744-5477	3/23/2010	http://www.usa.philips.com/
9	<a href="#">Edit   Details</a>	Manufacturer Internet	Panasonic	1-800-2117262	3/24/2010	www.panasonic.com/
10	<a href="#">Edit   Details</a>	Manufacturer Internet	JVC	1-800-252-5722	3/26/2010	www.jvc.com/
11	<a href="#">Edit   Details</a>	Manufacturer Internet	Coby	1-800-727-3592	4/6/2010	www.cobyusa.com/
12	<a href="#">Edit   Details</a>	Manufacturer Internet	AirScape Inc.	1-866-448-4187	4/7/2010	www.airscapfans.com/
13	<a href="#">Edit   Details</a>	Manufacturer Internet	Marley Engineered Products	1-800-642-4328	4/8/2010	http://qmarkmeh.com/en/
14	<a href="#">Edit   Details</a>	Manufacturer Internet	Triangle Engineering	(501) 982-7558	4/19/2010	www.trianglefans.com/
15	<a href="#">Edit   Details</a>	Manufacturer Internet	Chatham Brass Co., Inc	1-800-526-7553	4/19/2010	www.chathambrass.com/
16	<a href="#">Edit   Details</a>	Manufacturer Internet	KWC	1-678-334-2121	4/19/2010	www.kwcamerica.com/

Source: BenningfieldGroup, Inc. appliance market survey tracking system

The surveyor would select a model from a site and input the information collected into the tracking system. The item would then be added to the corresponding survey(s), allowing the end user to know from which type of survey site the item was collected. The system also allows

the user to select a certain appliance and look at the number and types of models that were surveyed, as shown in the figure below. This feature helped the project manager keep track of the number of items for each appliance and also assist in the quality checks of items entered.

**Figure 56: Tracking System's Showerheads Items Page**

Welcome **jeremy!** [ [Log Off](#) ]

CEC Appliance Survey

HomeItemsSurveysReports

Appliance Index (Page 1)

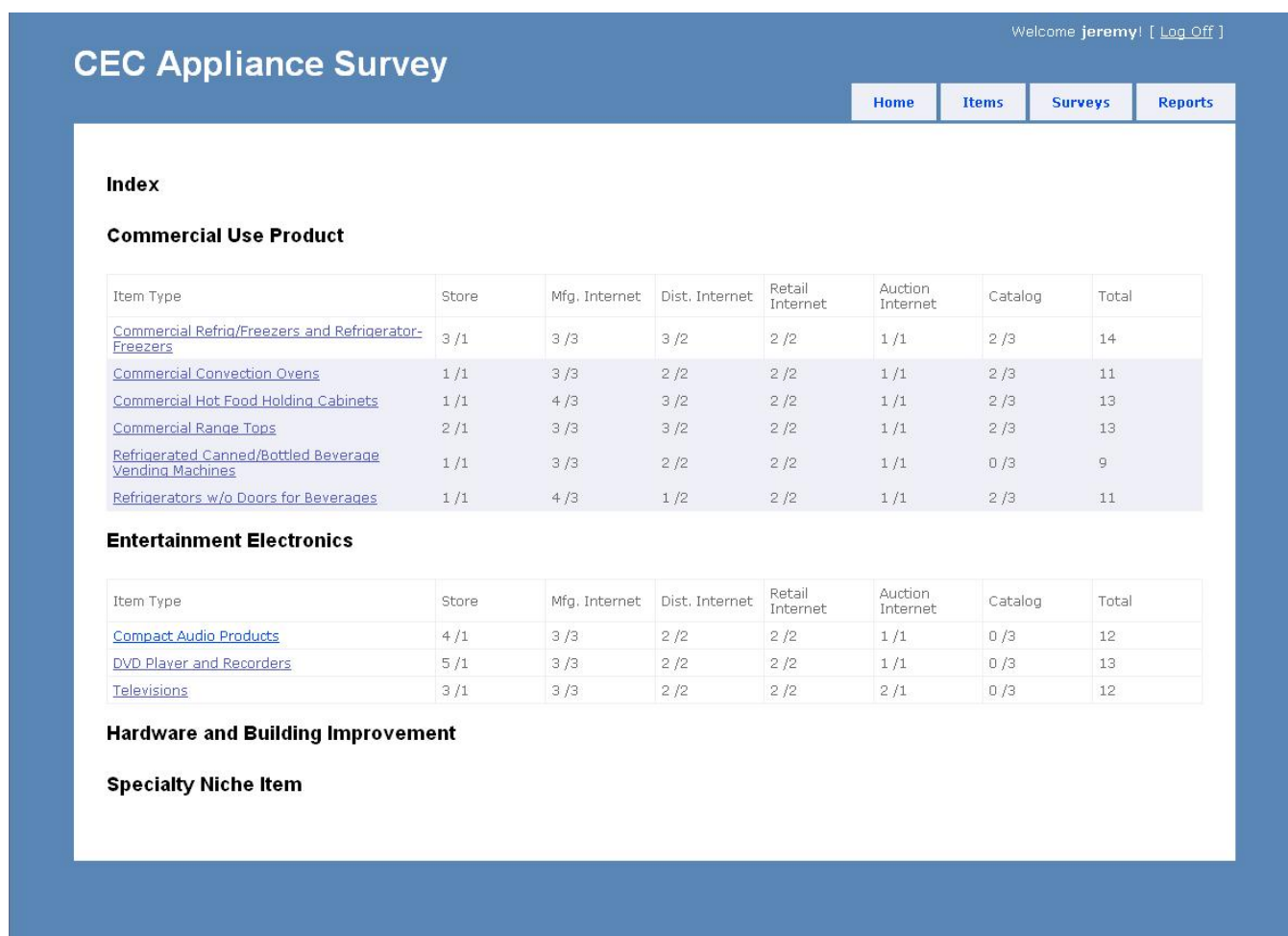
	Item Type	Manufacturer	Brand	Model Number	Capacity	Energy Use	Compliant	InDB
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	102S	NA	2.0 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	263S	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	443S	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	3ISA	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	C2	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	303A	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Chatham Brass	Chatham Brass	L3CCPB	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	KWC	KWC	Z.534.543	NA	2.5 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	KWC	KWC	Z.534.545	NA	2.5 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	KWC	KWC	Z.534.686	NA	2.5 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	KWC	KWC	K.26.VB.03.700	NA	2.5 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	KWC	KWC	26.254.083.000	NA	2.5 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Velocity	6320	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Vitalize	21007BN	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Envi	3233CBC	NA	1.75 gpm	Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Inspire	21717BN	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Moen	6399	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Moen	6300EPBC	NA	1.75 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Moen, Inc.	Moen	104239ORB	NA	2.5 gpm	Yes	Yes
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	american standard	Cadet	1675	none listed		No	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	american standard	symphone	4501	0		Yes	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	american standard	williamsburg	1045	na		No	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	Home Depot	Glacier Bay	476615	na		No	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	kohler	forte	r10275-4-cp	na		No	No
<a href="#">Edit</a>   <a href="#">Details</a>	Showerheads	kohler	archer	R11077-4-BN	na		No	No

Source: BenningfieldGroup, Inc. appliance market survey tracking system

Another feature of the tracking system is the capability to track the numbers of different types of surveys taken for each of the appliances. This allowed the project manager to keep abreast of the data as it was entered and monitor the progress toward survey goals. The figure below shows the home page of the tracking system and the corresponding surveys for each appliance.



**Figure 57: Tracking System's Appliance Survey Status Page**



Source: BenningfieldGroup, Inc. appliance market survey tracking system

The tracking system was invaluable when it came to the reporting of the collected information. It allows for reports to be created so that the user can collect the data and organize it for viewing in several different report formats. The tables for each of the appliance categories in the compliance findings section of the report were created using the tracking system report functionality.

Another advantage of this tracking system is that the Energy Commission personnel were able to monitor the progress of the project. They were also able to view and begin processing data as it was collected, rather than waiting until the contract was complete to compile the data.

## Appliance Compliance

For each appliance, an entry in the figure below was generated illustrating the percentage of models surveyed within that appliance category that were noncompliant. For the purposes of this project, an appliance model was noncompliant if it was not listed in the California Energy Commission Database, even though it may or may not have met the applicable Title 20

efficiency standards. The surveyors were unable to locate any evaporatively cooled air conditioners. The summary table below shows all the appliances that were surveyed and their percentages of noncompliance. The appliance categories in the Figure 58 are listed in order from most compliant to least compliant.

**Figure 58: Best to Worst Appliance Compliance Table**

<b>Appliance Categories</b>	<b>% Non-Compliant</b>
Computer Room Glycol-Cooled Air Conditioners	0.00%
Heat Pump Pool Heaters	0.00%
Portable Electric Spas	11.93%
Showerheads	16.33%
Residential Exhaust Fans	20.41%
Water Dispensers	21.21%
Computer Room Air-Cooled Air Conditioners	26.32%
Computer Room Water-Cooled Air Conditioners	27.45%
Ice Makers	31.43%
DVD Player & DVD Recorders	35.00%
Whole House Fans	36.17%
Commercial Convection Ovens	37.10%
Televisions	38.19%
Commercial Refrigerators/Freezers/Refrigerator-Freezers	41.57%
Combination Space/Water Heating Appliances	41.67%
Commercial Hot Food Holding Cabinets	51.09%
Torchieres	51.58%
Commercial Range Tops	55.62%
Portable (Spot) Air Conditioners	60.29%
Compact Audio Products	68.00%
Tub Spout Diverters	75.00%
Evaporative Coolers	76.92%
Ceiling Fans (excluding low-profile ceiling fans)	80.30%
Refrigerators w/o Doors (for Beverages)	82.35%
Refrigerated Canned/Bottled Beverage Vending Machines	85.00%
Residential Wine Chillers	86.49%
Infrared Heaters (Patio Heaters & non Patio Heaters)	89.66%
Under-Cabinet Luminaires	100.00%
No models were found for computer Room Evaporatively Cooled Air Conditioners	

Source: BenningfieldGroup, Inc. appliance market survey data

## **Recommendations**

### **Retail/Wholesale Store Surveys**

There are two things that could be done to address the unwillingness of managers and companies to allow the survey because they fear that something would be found that would result in official penalties. First of all, it might help to have a letter from the California Energy Commission on hand when setting up or commencing retail/wholesale store surveys. The letter could state the purpose of the surveys and reassure managers that no official penalties will come as a result of the surveys. This letter could be handed out when showing up to sites or sent out to managers who may want this type of verification before they have a surveyor visit the site. Another solution, which was offered by a site involved in this survey, is to allow the store manager to follow the surveyor and take notes for the company regarding all of the items surveyed. This would allow managers to feel more in control of the situation, thus making them feel more comfortable with the process.

Another issue identified was that when surveyors contacted the retail/wholesale stores to set up the survey time and date, the store managers would often try to direct them to the corporate office for approval. This would cause a delay of the survey while surveyors attempted to get the necessary approval. This is another situation where a letter from the California Energy Commission might prove to be useful. It is recommended that the surveyor contact the regional manager of a site to set up a day and time for the survey when the store manager wants to direct the surveyor to call the corporate office. This, more often than not, should result in less of a delay when trying to acquire the necessary permission(s) for the survey.

The final issue that came up was that some retail/wholesale stores would often attempt to put off the start of the survey. In this case, the recommendation is to be persistent with communication or simply find a different site with similar appliances to survey.

### **Internet and Catalog Surveys**

Internet surveys in this study took longer to complete than retail/wholesale store surveys. This is due to the fact that no two Internet sites are the same, so the surveyor had to spend time trying to figure out where to find the information that was needed to do the survey. It is recommended that the budget and time allotted for this task be increased.

It is also recommended that the surveyor be required to pay close attention to and note whether each website offers the appliances being surveyed for sale to consumers in California. Most websites in this study were not very forthcoming with this information. The California Energy Commission may want to decide how important this is for the next round of surveys and work with the contractor to create an objective measure that would yield consistent interpretation.

It is also recommended that the surveyor be required to define why the model was noncompliant. Was it due to lack of information on the model's label, information proving that the model did not meet an applicable Title 20 efficiency standard, or that the model was not

listed in the database? This would also require that an objective measure be defined, and the surveyors be trained in its interpretation, so that a consistent interpretation could be delivered.

Due to the increase of Web-based sales and marketing, companies are opting to use a Web-based catalog rather than a printed version. The California Energy Commission may want to reevaluate whether it is preferable to invest a lot of effort toward finding the printed catalogs, which seem to be becoming obsolete, or simply have the Internet surveys executed in more depth. Since the same products can usually be found on the Internet, it may be a better use of resources to minimize the use of printed catalogs to obtain data for surveys. Collecting the paper catalogs is time-consuming because the surveyors have to refer to the Internet site and call the stores to locate the catalogs. If it is determined that printed catalogs will still be used, surveyors should keep their eyes open for them while they are out in the field.

Surveyors found a redundancy of data on distributor and retail websites, so it may be a better use of resources to combine the classification, or to require one or the other to fulfill the requirement. When looking for distributor websites, surveyors noticed that distributor websites were often difficult to find because distributors do not always maintain a public Internet presence. If the distributor and retail websites were combined, the surveyor would spend less time searching for distributor websites to survey the appliances that are on the surveyors list provided by the California Energy Commission.

# **APPENDIX**

## **Models Misidentified as to Appliance Type**

***Prepared by:***

Tovah Ealey  
***Contract Manager***

***Contract Number: 400-09-004***

**DISCLAIMER**

This report was prepared as the result of work sponsored by the California Energy Commission. It does not necessarily represent the views of the Energy Commission, its employees or the State of California. The Energy Commission, the State of California, its employees, contractors and subcontractors make no warrant, express or implied, and assume no legal liability for the information in this report; nor does any party represent that the uses of this information will not infringe upon privately owned rights. This report has not been approved or disapproved by the California Energy Commission nor has the California Energy Commission passed upon the accuracy or adequacy of the information in this report.

As the survey team performed its data collection, Energy Commission appliance standards enforcement staff had access to the survey data in the survey team's tracking system, and immediately contacted in writing those manufacturers of appliance models identified as noncompliant (i.e., being sold or offered for sale in California, but not listed in the Energy Commission's database). Some manufacturers informed staff in their responses that the appliance types of the models identified by the surveyors had been misidentified. Appliance standards enforcement staff later confirmed a total of 184 misidentified models. The misidentifications often happened due to the complexity of, or nuances in, the Title 20 definitions of certain regulated appliances; or due to their similarity in appearance to other, non-regulated products. Since the errors were caught by Energy Commission staff well after the collection of data was complete, the information was not captured in the body of the consultant report. When taking these 184 models into account, the actual total of noncompliant models surveyed is 966, bringing the actual rate of noncompliance to 43 percent.

The following is a summary of the number of models, by appliance type, that were later confirmed by Energy Commission appliance standards enforcement staff to be misidentified by the survey team during the collection of survey data.

*Combination Space Water Heaters - 3 models*

One model was a boiler, and two were tankless water heaters.

*Computer Room Air Cooled Air Conditioners - 3 models*

Three models did not meet the Title 20 definition of computer room air cooled air conditioner.

*Evaporative Coolers - 3 models*

Three models were portable evaporative coolers (an appliance type specifically excluded from Title 20).

*Hot Food Holding Cabinets - 1 model*

One model was a commercial food service drawer warmer (an appliance type specifically excluded from Title 20).

*Infrared Heaters – 103 models*

These models were infrared electric resistance heaters (an appliance type not regulated by Title 20) and not infrared gas space heaters.

*Torchieres - 17 models*

One model did not meet the Title 20 definition of torchiere; and sixteen were portable luminaires as defined by Title 20.

*Under-Cabinet Luminaires – 53 models*

Fifty-three models did not meet the Title 20 definition of under-cabinet luminaire, as they were not designed to be used with modular office furniture.

*Whole House Fans – 1 model*

One model did not meet the Title 20 definition of whole house fan.

